The Nexus between Health and Economy: Evidence from Malaysia

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***Abstract* - With the recent spread of the pandemic that has disrupted global economic activities, this paper seeks to explore the causal relationship between health outcomes and the socioeconomic indicators in Malaysia. Besides that, this paper will evaluate the income-health relationship in determining empirically whether this hypothesis is likely to hold in Malaysia. Empirical evidence from this paper highlighted a bi-directional causality between life expectancy and economic growth. Comprehension of such true causal relationship will be crucial to determine the direction of the flows. The findings from this study will provides additional insights into the relationship between economic changes and health indicator.**

Keywords *– Life Expectancy, Economic Growth, Health Status, Granger Causal*

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I. Introduction

The importance of health has been recognized by many countries including Malaysia. According to the Ministry of Health Malaysia, Malaysia also aims to meet the WHO's recommended healthcare spending of 7% of GDP. In Malaysia Budget 2020, the Health Ministry has been allocated RM30.6 billion which acknowledging the importance of quality public healthcare. On the other hand, Cheah and Abdul-Rahim (2014) stated that an increase in health care spending for Malaysians also in line with an increase in income. Healthcare was seen as an important sector contributing to human capital development. Saad and Noor (2018) stated that higher productivity and labour efficiency largely contribute to a healthy society. The previous study such as Kurt (2015), Piabuoand Tieguhong (2017) also argues that health spending growth improve health outcomes and boost economy by raising productivity, skills, and knowledge. Nevertheless, the health and income nexus still open for debate. Riayati and Junaidah (2016) argue that healthcare spending does not significantly improve

economic development. Therefore, this research aims to determine the relationship between health status and the country's GDP in Malaysia.

Life expectancy is a widely used health indicator measuring the length of life expected to be lived by individuals at birth. Life expectancy has important implications as it affects economic growth and other socioeconomic indicators. In striving to achieve socio-economic progress, life expectancy becomes an important indication of such progress. This is in line with Marmot (2005) that claimed health status should be a concern to policymakers in every sector. However, the analysis of health status on socioeconomic factors has yet to be studied comprehensively and still lacking. In particular, the association between life expectancy and unemployment levels has received less attention. Some studies suggest that unemployment leads to health conditions while others suggest health problems lead to the risk of unemployment (Laditka, 2016).

An analysis of the life expectancy in Malaysia (Figure 1) had shown that the population health status had experienced a slow and steady increase over the past from 1971 to 2018. Despite that, a comparison of this data with other developed countries in Asia or even selected neighboring countries within the region had suggested otherwise. As in Figure 1, the comparison of Malaysian life expectancy with other Asian developed countries had shown that the overall health status for Malaysia trails behind these developed countries in Asia. Meanwhile, the comparison of the health level of selected ASEAN countries had shown that Malaysian life expectancy had been relatively lower than Singapore since the early '70s. On a separate note, Thailand's life expectancy had been lower compared to Malaysia in the early '70s. However, Thailand has been working on increasing their life expectancy over the past. In recent years, an increase in Thailand's life expectancy had been noted. In fact, Thailand's life expectancy is slowly surpassing Malaysian life expectancy. This analysis makes it even more crucial to analyze the socioeconomic indicators that have a significant impact on Malaysians' health.

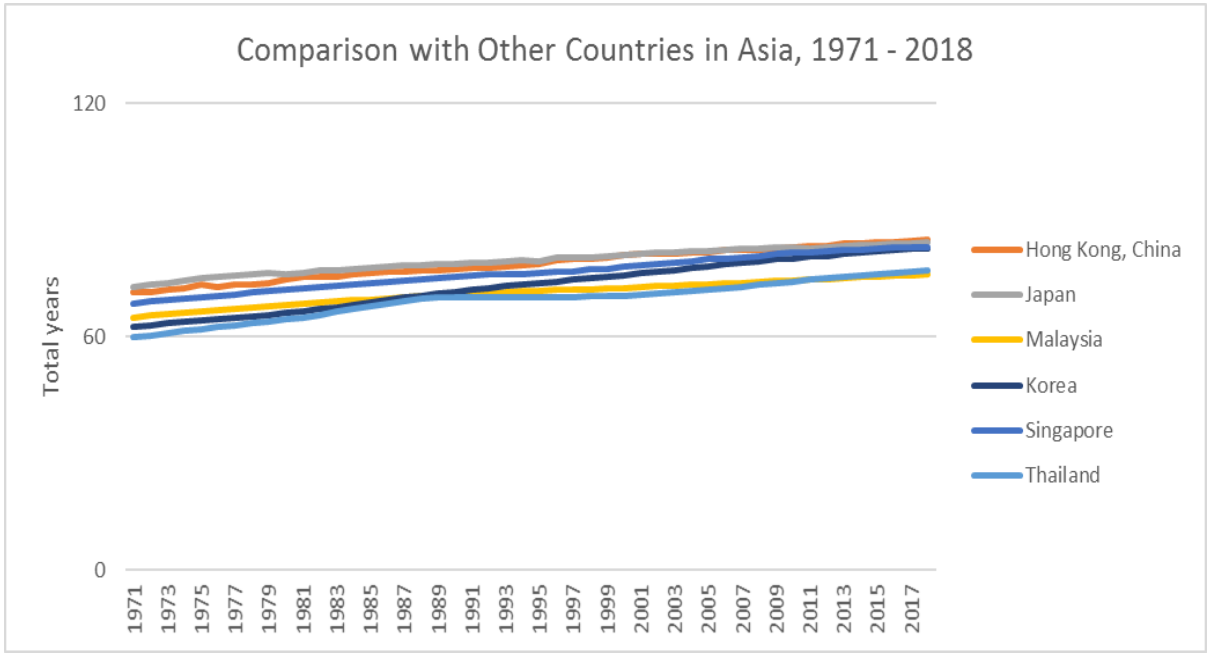

Figure 1. Comparison of life expectancy trend in Malaysia and developed countries in Asia
Source: Data extracted from the World bank (2020)

Despite that there had been many studies that had been performed on health care spending and economic growth, however, none of them had produce evidence of the direction of causality. Granger causality results are more informative and reliable (Lütkepohl, 1982). This study will bridge the literature gap by exploring causal relationship that remains ambiguous. The restrictive nature of these past studies that only consider the health expenditure and income relationship but neglected the impact on health outcome. Hence, the inclusion of unemployment rate and life expectancy in the empirical model will also contribute to the literature gap. In addition, the forecast error variance decomposition analysis was employed to consider the dynamic interaction of the variables. According to Chor (2011), this will support the robustness of the Granger causality results.

Toda-Yamamoto Causality approach will be adopted to detect any causality direction between health status and selected socioeconomic indicators. The finding of this study helps policy decision-making in allocating an economically sound and sufficient amount of resources to health services that leaves positive impact on economic growth. The association understanding is important in seeking a better understanding of the extent of

public policy efforts through the socioeconomic factors changes that may influence health status. Any public policies that either stimulate or curtail economic growth intrinsically affect the socioeconomic status structures and consequently the health levels (Brenner and Mooney, 1983). Therefore, it becomes crucial to understand the causal flow between health status and socioeconomic indicators.

The remainder paper is structured as follows: Section II reviews the literature on the health-income nexus, the association between health status and selected socioeconomic indicators. Section III and Section IV is devoted to the discussion on methodology and model specification. Section V discusses the empirical results and Section VI concludes with some policy implications and suggestions.

II. Literature Review

According to the health-led growth hypothesis theory, as the workforce becomes healthier, it will improve productivity and increase production and output (Mushkin, 1962). Health is the essential ingredient of productivities confirmed by many scholars. The early study by Bloom & Canning (2000) considers health care as an investment to the economy and incentive to develop new skills and knowledge. Meanwhile, the study by Mahumud et al., (2013) claimed that a higher income will improve life expectancy in their analysis conducted at Bangladesh. This finding is consistent Mahyar (2016) which conducted the study in Iran. The study applied the Vector Error Correction Model and suggested that a 1 % increase in GDP growth lead to growth of the life expectancy rate by 0.01 %. Another much recent study by Wang et al, (2020a) confirmed the positive association between economic growth and life expectancy in Pakistan.

Meanwhile, scholars produce mixed conclusions in panel study. An early study by Acemoglu and Johnson (2007) for 75 countries claimed that the insignificant association between life expectancy and income. Gurler and Ozsoy (2017) examine the relationship between life expectancy and economic growth using cross-sectional data for 56 Islamic Countries. Their result demonstrated an increase in life expectancy improve economic development. Similarly, Shahbaz et al. (2019) suggested that economic growth positively contributes to the life expectancy level for 16 African countries. The same result was also found in He and Li (2020) for 65 countries within three levels of aging groups. Interestingly the results show that the effect is stronger in high level of aging group compared to a younger age group. On the other hand, Jalil and Kamaruddin (2018) employed a panel fixed effect model analysis and indicated in their finding that life expectancy demonstrated a significant positive effect on human development index. This suggested that life expectancy is also perceived as a vital indicator to imply a better level of human development index besides education and higher GDP.

Meanwhile, Ngangue and Manfred (2015) show that life expectancy positively and significantly affects income in low-income and high-income countries. On the contrary, the effect was not found for the middle-income countries. The mixed causal relationship has also been seen in high-income countries. Kefeli et al., (2018) who also employed the Yamamoto Granger non-causality model showed a mixed causal direction among high-income economies of OIC nations. Their study found that Bahrain and Kuwait's health conditions lead to higher economic growth, while the opposite direction was found for Saudi Arabia, and bidirectional causality found for the United Arab Emirates. However, there was no causal direction found for Brunei, Oman, and Qatar.

The link between health and income is also observed widely using health expenditure. However, to date, there are mixed results about the health expenditure and income nexus in cross-countries and panel data. In panel studies, a recent study by Rana et al.,(2020) for 161 countries from 1995 until 2014 found that it is estimated 43% of the variation in global health spending was influenced by economic growth. The study revealed that income affected health expenditure greater in higher-income countries than in lower-income countries. Yassin and Aralas (2019) who adopted the fixed-effect model also confirmed that the health expenditure allocation will increase in Asian countries as the countries become wealthier. Haseeb et al., (2019) examine the relationship between health expenditure and economic growth of ASEAN countries using Auto-Regressive Distributed Lag (ARDL). The study revealed that economic growth has a positive significant impact on health expenditure in the long run. The results are however, not consistent with Dincer and Yuksel (2019). Based on the Dumitrescu Hurlin panel causal analysis result, this study concluded that there is no causal relationship between health expenditure and economic growth. Meanwhile, Halıcı-Tülüce (2016) found a negative relationship between income and health expenditure in 25 high-income and 19 low-income economies.

Within a country context study, it is confirmed by Pakdaman et al., (2019) where total expenditure in the health sector increases when the countries become richer in Iran. Meanwhile, Wang et al., (2019b) found that there are a short-run and long-run causal relationship between health expenditure and economic growth in Pakistan from 1995 until 2017. Similar conclusion was found in India (Dubey,2020). Within the context of Malaysia, Abdullah et al., (2016) provide evidence of a long-run relationship between GDP and health expenditure in Malaysia. However, the results confirmed a negative relationship in the short run. Meanwhile, Khan et al., (2016) revealed that significant positive effect of income on health expenditure in Malaysia.

This finding is consistent with Sirag et al., (2017). However, the health expenditure and income nexus remained debatable as Yun and Yusoff (2018) claimed that health care expenditure has a negative relationship with economic growth in Malaysia. Similarly, Sulaiman *et al.*(2018) highlighted the insignificant relationship of health expenditure on economic development.

It is interesting to note that a direct relationship may not necessarily be found between health expenditure and economic growth. Rather, the significant effect of health level in improving economic growth could have resulted through the impact of health expenditure. This is especially been highlighted by Tang (2013) that drew an argument that health care spending fosters economic growth in Malaysia through its impact on life expectancy by employing the Toda-Yamamoto granger causality approach. Similarly, Riayati and Junaidah (2016) through the ARDL cointegration framework had demonstrated long-run relationship between public health expenditure and health outcomes in Malaysia from 1984 to 2009. Their findings further inferred that public health expenditure affects life expectancy positively. A study by Jaba *et al.* (2014), a significant relationship between life expectancy and health expenditures were also found in study conducted on 175 world countries. Bokhari *et al.* (2007) using the instrumental variables technique had revealed that besides economic growth, government spending on health is another significant contributor to health outcomes for developing countries in their research on 127 countries for the year 2000.

On the contrary, Filmer and Princhett (1999), Rajkumar and Swaroop (2008) have provided a different argument. Filmer and Princhett (1999) discovered a small impact of public spending on health outcomes in their analysis of cross-national data by using Instrumental Variables (IV) estimation procedure. Meanwhile, Rajkumar and Swaroop (2008) found out that public spending virtually has zero impact on health outcomes for poorly governed countries. The result of their empirical study was conducted on 91 developed and developing countries over three years through Ordinary Least Squares (OLS) regression clearly indicated the importance of good governance to obtain the expected improvement in outcomes.

Aside from income, health also influences by renewable energy (Ullah et.,2020), trade (Ullah et.,2020), CO2 emissions (Wang et al.,2019b), and labor force (Yassin and Aralas, 2019). In particular, we would like to highlight the empirical studies between health status and unemployment rate that remain relatively sparse. Singh and Siahpush (2016) demonstrated an inverse association between unemployment and life expectancy in the United States. This is consistent with Brenner and Mooney's (1983) suggestion that unemployment could result in psychological stress that leads to poor health status. In a similar manner, Monsef and Merjadi (2015) demonstrated that unemployment is a significant contributor that can influence life expectancy in their analysis of 136 countries from 2002 to 2010 by estimating a Random Effect Model (REM). Landitka and Landitka (2015) also pointed out that rising unemployment could lower life expectancy in their empirical estimation using multinomial logistic Markov models on the panel data of the United States. A study by Gerdtham and Johannesson (2003) revealed that unemployment can significantly increase the risk of health problems in Sweden through their estimation of a probit model. Tafran *et al.* (2020) revealed that unemployment significantly affects total life expectancies in Malaysia from 2002 to 2014 by employing multivariate regressions. On the contrary, Sede and Ohemeng (2015) disputed the earlier findings by revealing an insignificant finding in the case of Nigeria from 1980 to 2011 using the Vector Autoregression (VAR) and Vector Error Correction Model (VECM) frameworks. In summary, although the relationship between income and health has been extensively discussed under various context, nevertheless, the finding remains inconsistent and inconclusive.

III. Theoretical Model

Based on the human capital theory, the investment in health services improve people as productive agents and made yield a continuing return in the future. This theory has advocated the significant role of health expenditure on economic growth and has sparked the interest of many researches to investigate this theory. Nonetheless, it should be noted that the causal relationship between health expenditure and income has remains ambiguous (Tang, 2010). Tang (2009), Samundram *et al.* (2009), Rao *et al.* (2008), Tang and Lau (2008) has attempt to model the health expenditure in Malaysia within a time series framework. However, the main findings from these studies are limited to the exploration of relationship between health expenditure and income.

Healthier population will be more productive and may accumulate physical capital through increase in the size of labour force. As such, health status is considered as an important asset that can increase future income. In line with this, Monsef and Mehrjardi (2015) argued that it is crucial to identify the factors that contribute to the health level. In fact, the information on a country's health status will help policy makers in the search for cost effective mechanism that provides health care to optimize the gains. The cognition of a proxy for health status to investigate the factors which contribute to the health of the population is both necessary and essential. Accoding to Halicioglu (2010), life expectancy is a broad measure of a country's health status. Hence, a model

should be developed with life expectancy as the dependent variable to analyse the socioeconomic factors that contribute to the health level.

Gerdtham and Johannesson (2003), Laditka (2015), Sede and Ohemeng (2015) highlighted the association between health status with unemployment rate. In Malaysia, studies by Tafran *et al.* (2020), Chan and Devi (2015) has included unemployment rate as one of the factors that contribute to life expectancy. Besides that, Chan and Devi (2015) has advocated the importance of health care resources such as health care expenditure that will likely increase life expectancy. In consistent with these studies, the unemployment rate and health care expenditure will be included in the empirical model.

IV. Empirical Model

This study uses annual time series data from 1971 to 2018. All of the series were transformed into logarithmic form to reduce the heteroscedasticity problem. The variables included in this study are life expectancy (LIFE), real gross domestic product (GDP), health expenditures (HEALTH), and unemployment rate (UNEM). Table 1 shows the description for each variable.

Table 1: Description of Variables

Variable	Description of Variable	Measurement of Variable	Source	Expected Finding
Life Expectancy (LIFE)	Life expectancy at birth indicates the number of years a newborn infant would live if prevailing patterns of mortality at the time of its birth were to stay the same throughout its life.	Years	World Development Indicators	Dependent Variable
Real Gross Domestic Product (GDP) (Constant 2010)	Measurement of total production by the entire residents in a country for a certain period before deducting the allocation for fixed capital consumption.	Ringgit Malaysia (RM)	World Development Indicators	Bidirectional Causality
Health Expenditures (HEALTH)	Public spending on health care as part of the government development expenditures.	Ringgit Malaysia (RM)	Economic Planning Unit (EPU)	Bidirectional Causality
Unemployment Rate (UNEM)	Indicator of the percentage of unemployed in the country	Percentage	Malaysia Statistical Department	Bidirectional Causality

This research will apply the Toda-Yamamoto Causality approach to detect any causality direction.This approach is suitable to be adopted irrespective of the integration order and the absence of co-integration condition. The model for this study is build based on the underlying theories postulated by Tang (2009), Samundram *et al.* (2009), Rao *et al.* (2008), Tang and Lau (2008), Tafran *et al.* (2020), Chan and Devi (2015). The logarithm equation for this study is set up as follow:

$$lnLIFE = \alpha + lnGDP + lnHEALTH + lnUNEM + \mu_t \quad (1)$$

To apply the Toda-Yamamoto approach, estimation was done on the augmented VAR model ($k + d_{max}$) where k is the optimal lag length selected of the first VAR model and d_{max} is the maximum order of integration of the series.

V. Empirical Results and Findings

In the first stage of this study, the Augmented Dickey-Fuller (ADF) and DF-GLS tests are conducted to determine the maximum order of integration (d_{max}). LNGDP, LNHEALTH and LNUNEM are found to be integrated of order one $I(1)$, while LNLIFE is found integrated of order two $I(2)$. Hence, the maximum order of integration in the system is two ($d_{max} = 2$).

In the subsequent stage of the analysis, the Akaike Information Criteria (AIC) was used to select the optimal lag length of the variables (k). The selection of Akaike Information Criteria (AIC) was in consistent with many studies that have adopted AIC instead of other criteria. A simulation study by Liew (2004) provided a formal groundwork in support of the popular choice of AIC as a better criterion for smaller sample and are found to produce the least probability of under estimations compared to other criteria. The maximum lag length selected was then found to be $k = 2$. Since $d_{max} = 2$ and $k = 2$, the augmented VAR (4) model was estimated. Since the series are integrated of order 1, I(1) and integrated of order 2, I(2), it is necessary to employ the vector autoregressive model (VAR) analysis. VAR analysis result are presented in Table 2. The significant critical F-values reported in Table 2 demonstrated strong joint relationships between the variables of life expectancy, real gross domestic product, health care expenditure and unemployment rate. Next, the direction of causality is then determined by using the Toda-Yamamoto causality test as shown in Table 3.

Table 2: Result of Vector Autoregressive Model (VAR)

Variable	LNLIFE	LNGDP	LNHEALTH	LNUNEM
LNLIFE(-1)	2.205051*	-0.407811	-6.011345***	0.567591
LNLIFE(-2)	-1.228187*	0.066567	16.96594***	-0.500149
LNLIFE(-3)	-0.527302	0.842565	-15.82944	-0.543977
LNLIFE(-4)	0.575195*	-0.634720	4.038558	0.811214
LNGDP(-1)	0.006937	0.461916***	0.298381	-0.342355
LNGDP(-2)	0.010565	-0.186914	1.853131	1.253570
LNGDP(-3)	0.023394	0.560873***	-1.886483	-1.810428
LNGDP(-4)	-0.074979	0.136144	0.254662	0.918759
LNHEALTH(-1)	0.010083	-0.017474	0.946492*	-0.015144
LNHEALTH(-2)	0.001538	-0.006015	-0.598641*	0.067665
LNHEALTH(-3)	0.000697	0.000767	0.378042***	-0.003082
LNHEALTH(-4)	0.008824	0.019345	-0.187282	-0.061935
LNUNEM(-1)	-0.003455	-0.058334	-0.449239	0.882085*
LNUNEM(-2)	-0.006554	0.006048	1.070540	0.060812
LNUNEM(-3)	0.038876	0.093152	-0.964650	-0.443601
LNUNEM(-4)	-0.066642*	0.099520	0.555201	0.022235
C	0.242022**	0.262236	-2.591907	0.335856
R^2	0.999139	0.998953	0.978576	0.884657
F-stat	1957.268	1610.329	77.07907	12.94282
Prob(F-stat)	0.000000	0.000000	0.000000	0.000000

*Significant at 1% significance level, **Significant at 5% significance level, ***Significant at 10% significance level

Table 3: Toda-Yamamoto Granger Causality Test Results

Direction of Causality	χ^2	p-value
LNGDP→LNLIFE	9.633301**	0.0471
LNLIFE→LNGDP	9.059224***	0.0596
LNHEALTH→LNLIFE	8.453693***	0.0763
LNLIFE→LNHEALTH	15.89872*	0.0032
LNUNEM→LNLIFE	10.84046**	0.0284
LNLIFE→LNUNEM	3.024986	0.5537
LNHEALTH →LNGDP	3.394791	0.4941
LNGDP→LNHEALTH	4.673257	0.3225

*Significant at 1% significance level, **Significant at 5% significance level, ***Significant at 10% significance level

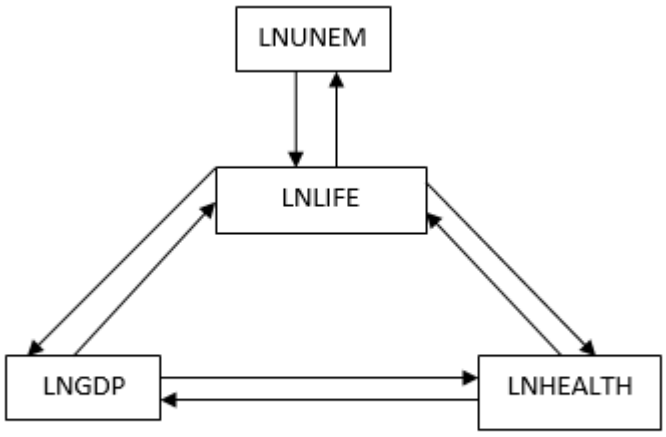

Figure 2. Granger Causal Relationship Between Variables
Source: Author's Calculation

Table 4: Variance Decompositions Analysis Results

Variance Decomposition of LNLIFE				
Period	LNLIFE	LNGDP	LNHEALTH	LNUNEM
1	100.00	0.00	0.00	0.00
2	96.75	0.75	2.49	0.01
3	91.28	1.33	7.33	0.06
4	85.75	1.69	12.48	0.08
5	81.20	1.84	16.90	0.06
6	77.87	1.81	20.25	0.06
7	75.61	1.70	22.52	0.17
8	74.09	1.57	23.84	0.50
9	73.00	1.53	24.37	1.10
10	72.12	1.60	24.37	1.91
Variance Decomposition of LNGDP				
Period	LNLIFE	LNGDP	LNHEALTH	LNUNEM
1	9.53	90.47	0.00	0.00
2	13.28	85.40	1.15	0.17
3	17.71	78.14	3.15	1.00
4	21.01	70.90	4.54	3.55
5	23.02	64.05	5.18	7.75
6	23.97	58.12	5.37	12.53
7	24.19	53.29	5.39	17.13
8	23.94	49.53	5.40	21.14
9	23.38	46.67	5.40	24.55
10	22.62	44.52	5.39	27.48
Variance Decomposition of LNHEALTH				
Period	LNLIFE	LNGDP	LNHEALTH	LNUNEM
1	6.73	3.04	90.23	0.00
2	5.12	1.89	91.72	1.26
3	4.27	2.90	91.07	1.77
4	4.31	3.30	90.67	1.72
5	4.41	3.27	89.99	2.34
6	4.31	3.37	88.72	3.60
7	5.32	3.44	86.64	4.60

8	8.61	3.31	83.16	4.92
9	13.50	3.20	78.58	4.72
10	17.97	3.28	74.39	4.36
Variance Decomposition of LNUNEM				
Period	LNLIFE	LNGDP	LNHEALTH	LNUNEM
1	1.28	47.29	2.05	49.39
2	3.25	50.21	6.16	40.37
3	4.32	49.96	8.31	37.41
4	5.18	49.98	8.86	35.98
5	5.91	49.79	8.80	35.50
6	6.67	49.34	8.74	35.35
7	7.62	48.54	8.63	35.21
8	8.80	47.77	8.50	34.92
9	9.96	46.97	8.60	34.47
10	10.77	46.25	8.98	34.00

The results from Table 3 show that there is bi-directional causality between life expectancy and real gross domestic product (GDP). Therefore, provided robust support to the income-health relationship. Besides that, a bi-directional causal relationship was also found between life expectancy and health expenditure. Meanwhile, a unidirectional causality was found running from the unemployment rate to life expectancy. However, a reverse causality effect was not found. This appears to suggest that unemployment could cause the growth of life expectancy. The flow of causality from the socioeconomic factors towards life expectancy, therefore revealed that the socioeconomic variables such as economic growth, health expenditure and unemployment could play a significant role in improving the population's health status. Additionally, there is a causal relationship found between health expenditure and economic growth. This finding is consistent with Tang (2013) confirming that health care expenditure does not granger cause economic growth, but it granger causes life expectancy. This implies that health care expenditure does not affect health level directly but can improve economic growth through its impact on life expectancy.

Table 4shows the variance decomposition analysis results. Based on the outcome of the analysis, 96.75% shocks in life expectancy were explained by itself in the short run (2 years period). This percentage gradually declined to 72.12% in the long run (10 years period). This means that life expectancy is not a truly exogenous variable and tend to be endogenous in the long run. The results demonstrated that after 10 years, 22.62 per cent of the variation in real GDP can be explained by life expectancy. Meanwhile, 17.97 per cent of the variation in health care expenditure is also explained by life expectancy. Whereas, 10.77 per cent of the variation in unemployment rate can be explained by life expectancy. As such, granger causality relationship can be observed between other variables with life expectancy. This is consistent with Granger causality results as presented earlier. In explaining the shocks to life expectancy, health expenditure is more important, followed by unemployment rate and real GDP.

VI. Discussion and Conclusion

Empirical findings from this study had successfully highlighted clear evidence of bi-directional causality between life expectancy and economic growth in Malaysia. This supported the income-health hypothesis and corroborates with findings by Tang (2011) and Chan and Devi (2015). According to Tang (2011), investment in health is a prominent source to generate economic growth in the long run. The causal relationship found between life expectancy with real GDP indicated that health plays a paramount role in supporting the Malaysian economy. This could suggest that any policy initiatives to improve the health level of the population will ultimately lead to higher economic growth. Meanwhile, Chan and Devi (2015) claimed that an increase in GDP leads to an increase in life expectancy.

Additionally, the results pointed to another bi-directional causality relationship found between life expectancy and health expenditure. Hence, suggesting that Government's health care spending had a simultaneous cause and effect on life expectancy. Thus, conforms to Chan and Devi (2015) which indicated positive association between public expenditure and health care with life expectancy. As such, indicated the importance of health care facilities to be accessible to the entire population. The relationship between resources and outcomes is important for accessing whether a country has a performing health system (Jaba *et al.*, 2014).

This is in line with Tang's (2013) suggestion that health care expenditure resulted in direct impact on life expectancy. This further corroborates the argument that health care expenditure can foster economic growth in Malaysia through its significant impact on life expectancy.

On a separate note, the findings also revealed a unidirectional causality that runs from the unemployment rate to life expectancy. Association found between the rate of unemployment and life expectancy was consistent with Monsef and Mehrjardi (2015), Tafran *et al.* (2020), Sede, and Ohemeng (2015). These past studies had pointed out the unemployment rate as one of the economic factors that can significantly affect life expectancy. Unemployment often been interpreted as a stressful life event that can lead to other health problems. Besides that, unemployed people may be less sensitive to their health care. Gerdtham and Johannesson (2003) had suggested unemployment as a health hazard that can increase the risk of being dead.

As the results had shown that the health level plays a crucial role in boosting economic performance in Malaysia, policymakers should formulate policies that would enhance health conditions. A better health care system should be developed to cater to the populations' needs. This is inconsistent with Tang (2011) that there should be more policies taken to encourage health spending in building a healthy productive society that can support Malaysia's economic growth. Healthier individuals will be more productive in generating more outputs. According to Jaba *et al.* (2014), there is variation of health expenditures per capita among the developed, developing or less-developed countries, and this difference appears to be growing. Hence, this calls for health policies that should be oriented towards reducing health inequalities. As such, from the context of Malaysia health care services should be made more accessible to all by extending the coverage of the health care programs to all, particularly to the rural population. This will help in minimizing the inequality distribution of health care in Malaysia (Tang, 2010). In view that this study is a country-specific study, the findings from this paper will be useful for country-specific policymaking.

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